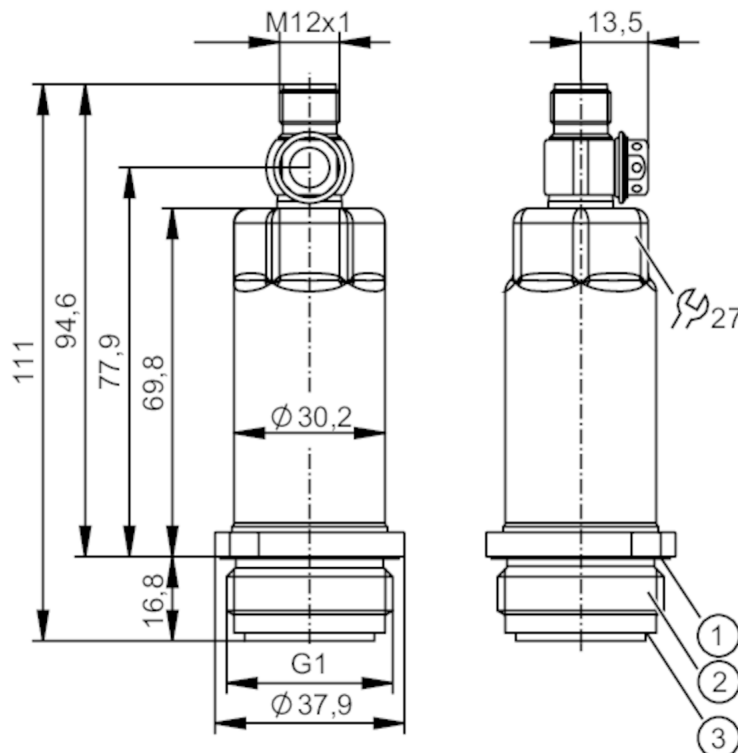


# PM1714



## Flush pressure sensor

PM-016-REA01-E-ZVG/US



- 1 groove with sealing ring (DIN EN ISO 1179-2)
- 2 external thread G1 (Aseptoflex Vario)
- 3 groove for sealing ring



ACS



CRN



EC 1935/2004

EHEDG

Certified

FCM

FDA

IO-Link

Reg31

UK

CA

Reg31

UK

CA

### Product characteristics

|                              |                                                           |                 |                |
|------------------------------|-----------------------------------------------------------|-----------------|----------------|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analog outputs: 1 |                 |                |
| Measuring range              | -1...16 bar                                               | -14.6...232 psi | -0.1...1.6 MPa |
| Process connection           | threaded connection G 1 external thread Aseptoflex Vario  |                 |                |

### Application

|                                                |                                                                       |          |         |
|------------------------------------------------|-----------------------------------------------------------------------|----------|---------|
| System                                         | gold-plated contacts                                                  |          |         |
| Measuring element                              | ceramic-capacitive pressure measuring cell                            |          |         |
| Temperature monitoring                         | no                                                                    |          |         |
| Application                                    | flush mountable for the food and beverage industry                    |          |         |
| Media                                          | viscous media and liquids with suspended particles; liquids and gases |          |         |
| Medium temperature [°C]                        | -25...150                                                             |          |         |
| Min. bursting pressure                         | 250 bar                                                               | 3625 psi | 25 MPa  |
| Pressure rating                                | 75 bar                                                                | 1085 psi | 7.5 MPa |
| Vacuum resistance [mbar]                       | -1000                                                                 |          |         |
| Type of pressure                               | relative pressure; vacuum                                             |          |         |
| No dead space                                  | yes                                                                   |          |         |
| MAWP (for applications according to CRN) [bar] | 60                                                                    |          |         |

### Electrical data

|                       |            |
|-----------------------|------------|
| Operating voltage [V] | 18...30 DC |
|-----------------------|------------|



## Flush pressure sensor

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|                                        |                 |                                                                                                    |                                                       |
|----------------------------------------|-----------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Min. insulation resistance             | [MΩ]            | 100; (500 V DC)                                                                                    |                                                       |
| Protection class                       |                 | III                                                                                                |                                                       |
| Reverse polarity protection            |                 | yes                                                                                                |                                                       |
| Integrated watchdog                    |                 | yes                                                                                                |                                                       |
| 2-wire                                 |                 |                                                                                                    |                                                       |
| Current consumption                    | [mA]            | 3.5...21.5                                                                                         |                                                       |
| Power-on delay time                    | [s]             | 1                                                                                                  |                                                       |
| 3-wire                                 |                 |                                                                                                    |                                                       |
| Current consumption                    | [mA]            | < 45                                                                                               |                                                       |
| Power-on delay time                    | [s]             | 0.5                                                                                                |                                                       |
| Inputs / outputs                       |                 |                                                                                                    |                                                       |
| Number of inputs and outputs           |                 | Number of digital outputs: 1; Number of analog outputs: 1                                          |                                                       |
| Outputs                                |                 |                                                                                                    |                                                       |
| Total number of outputs                |                 | 2                                                                                                  |                                                       |
| Output signal                          |                 | analog signal; IO-Link; (configurable)                                                             |                                                       |
| Number of digital outputs              |                 | 1; (IO-Link)                                                                                       |                                                       |
| Number of analog outputs               |                 | 1                                                                                                  |                                                       |
| Analog current output                  | [mA]            | 4...20; (scalable)                                                                                 |                                                       |
| Max. load                              | [Ω]             | 700; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)                                                             |                                                       |
| Short-circuit proof                    |                 | yes                                                                                                |                                                       |
| Overload protection                    |                 | yes                                                                                                |                                                       |
| Measuring/setting range                |                 |                                                                                                    |                                                       |
| Measuring range                        |                 | -1...16 bar                                                                                        | -14.6...232 psi<br>-0.1...1.6 MPa                     |
| Analog start point                     |                 | -1...12.8 bar                                                                                      | -14.6...185.6 psi<br>-0.1...1.28 MPa                  |
| Analog end point                       |                 | 2.2...16 bar                                                                                       | 32...232 psi<br>0.22...1.6 MPa                        |
| In steps of                            |                 | 0.01 bar                                                                                           | 0.2 psi<br>0.001 MPa                                  |
| Factory setting                        |                 |                                                                                                    | ASP = 0.0 bar<br>AEP = 16.0 bar                       |
| Accuracy / deviations                  |                 |                                                                                                    |                                                       |
| Repeatability                          | [% of the span] | < ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)                                     |                                                       |
| Characteristics deviation              | [% of the span] | < ± 0,2; (linearity incl. hysteresis and repeatability, limit value setting to DIN EN IEC 62828-1) |                                                       |
| Linearity deviation                    | [% of the span] | < ± 0,15; (Turn down 1:1)                                                                          |                                                       |
| Hysteresis deviation                   | [% of the span] | < ± 0,15; (Turn down 1:1)                                                                          |                                                       |
| Long-term stability                    | [% of the span] | < ± 0,1; (Turn down 1:1; per year)                                                                 |                                                       |
| Total deviation over temperature range |                 | Temperature range                                                                                  | total deviation                                       |
|                                        |                 | -25...15 °C                                                                                        | Characteristics deviation ± 0,05 % of the span / 10 K |
|                                        |                 | 15...80 °C                                                                                         | Characteristics deviation                             |
|                                        |                 | 80...150 °C                                                                                        | Characteristics deviation ± 0,1 % of the span / 10 K  |
| Notes on the accuracy / deviation      |                 | for further details see section Diagrams and graphs                                                |                                                       |

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## Flush pressure sensor

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| Reaction times                    |                                                                                                                           |                     |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------|
| Damping for the analog output dAA | [s]                                                                                                                       | 0...4               |
| 2-wire                            |                                                                                                                           |                     |
| Step response time analog output  | [ms]                                                                                                                      | 30                  |
| 3-wire                            |                                                                                                                           |                     |
| Step response time analog output  | [ms]                                                                                                                      | 7                   |
| Interfaces                        |                                                                                                                           |                     |
| Communication interface           | IO-Link                                                                                                                   |                     |
| Transmission type                 | COM2 (38,4 kBaud)                                                                                                         |                     |
| IO-Link revision                  | 1.1                                                                                                                       |                     |
| SDCI standard                     | IEC 61131-9                                                                                                               |                     |
| Profiles                          | Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)                                                  |                     |
| SIO mode                          | no                                                                                                                        |                     |
| Required master port class        | A                                                                                                                         |                     |
| Process data analog               | 3                                                                                                                         |                     |
| Min. process cycle time           | [ms]                                                                                                                      | 3.2                 |
| IO-Link resolution pressure       | [bar]                                                                                                                     | 0.005               |
| IO-Link functions (acyclical)     | application specific tag; internal temperature                                                                            |                     |
| Supported DeviceIDs               | Type of operation                                                                                                         | DeviceID            |
|                                   | default                                                                                                                   | 661                 |
| Operating conditions              |                                                                                                                           |                     |
| Ambient temperature               | [°C]                                                                                                                      | -25...80            |
| Storage temperature               | [°C]                                                                                                                      | -40...100           |
| Protection                        | IP 67; IP 68; IP 69K                                                                                                      |                     |
| Tests / approvals                 |                                                                                                                           |                     |
| EMC                               | DIN EN 61000-6-2                                                                                                          |                     |
|                                   | DIN EN 61000-6-3                                                                                                          |                     |
| Shock resistance                  | DIN EN 60068-2-27                                                                                                         | 50 g (11 ms)        |
| Vibration resistance              | DIN EN 60068-2-6                                                                                                          | 20 g (10...2000 Hz) |
| MTTF                              | [years]                                                                                                                   | 323                 |
| Note on approval                  | Factory certificate available as download at <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a> |                     |
| UL approval                       | UL approval number                                                                                                        | J021                |
| Mechanical data                   |                                                                                                                           |                     |
| Weight                            | [g]                                                                                                                       | 308.3               |
| Material                          | stainless steel (1.4404 / 316L); PBT                                                                                      |                     |
| Materials (wetted parts)          | ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L); surface characteristics: Ra < 0,4 / Rz 4; PTFE                  |                     |
| Min. pressure cycles              | 100 million                                                                                                               |                     |
| Tightening torque                 | [Nm]                                                                                                                      | 35                  |
| Process connection                | threaded connection G 1 external thread Aseptoflex Vario                                                                  |                     |
| Remarks                           |                                                                                                                           |                     |
| Pack quantity                     | 1 pcs.                                                                                                                    |                     |

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## Flush pressure sensor

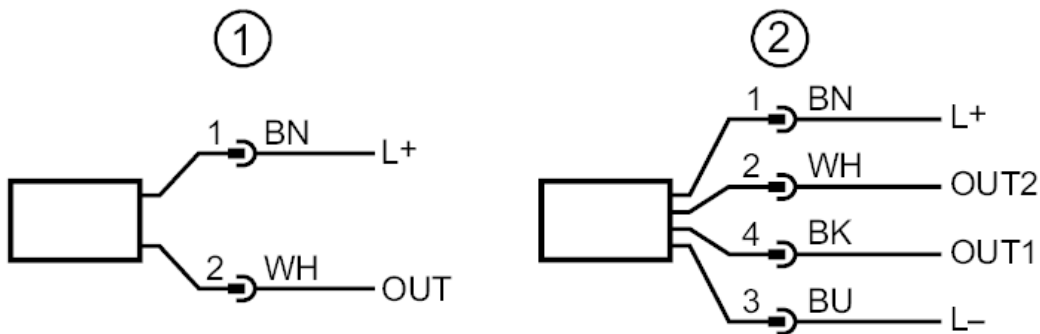
PM-016-REA01-E-ZVG/US

### Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



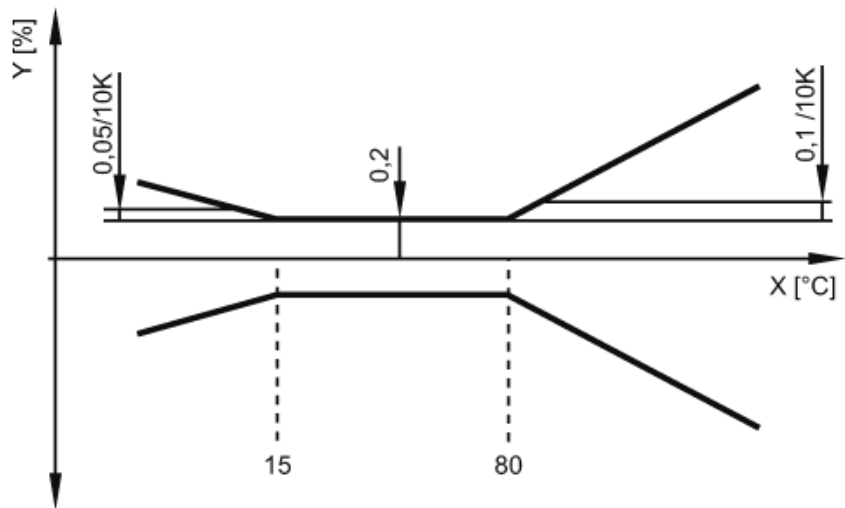
### Connection



- 1 connection for 2-wire operation ( analog )
  - 2 connection for 3-wire operation ( analog / IO-Link )
- OUT1 : IO-Link  
OUT2 : analog output

### Diagrams and graphs

ambient temperature influence on the accuracy



X temperature  
Y total deviation